DOCUMENT RESUME

ED 330 764 UD 028 002

AUTHOR Ramey, Madelaine
TITLE Compensatory Education Sustained Gains from Spring 1985 to Spring 1987. Report No. 90-4.
INSTITUTION Seattle Public Schools, Wash.
PUB DATE Oct 90
NOTE 13p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Achievement Gains; Compensatory Education; Computer Assisted Instruction; *Conventional Instruction; Elementary Education; *Instructional Effectiveness; Program Evaluation; Reading Consultants; *Remedial Instruction; Tutoring; Urban Schools
IDENTIFIERS *Education Consolidation Improvement Act Chapter 1; Seattle Public Schools WA; *Washington (Seattle)

ABSTRACT

This report examines the effectiveness of four different instructional models used to deliver compensatory education in 1985-86 in Seattle (Washington) by analyzing "sustained gains" in student achievement. A student's "sustained gain" is the reading or mathematics achievement test score gain between spring 1985 and spring 1987, a period that included 1 year of compensatory education in 1985-86. Students may have been served by one of the following instructional models: (1) a traditional "pull out" approach (Pull-Out); (2) computer-assisted instruction (CAI); (3) individual tutoring by community volunteers (HOSTS); or (4) a reading resource specialist (RRS). The sustained gains of compensatory education students were analyzed at the primary and the intermediate levels for each instructional model and were compared with the gains of non-compensatory education students. The following findings are reported: (1) at the primary level, there were no significant differences between gains among any of the models and the comparison group; (2) at the intermediate level, both HOSTS and Pull-Out participants showed reading gains greater than gains for the comparison group, CAI participants showed a negative trend in reading scores, and only Pull-Out participants showed mathematics gains that were greater than the comparison group; (3) the positive effect of the Pull-Out approach duplicates findings of an earlier study; and (4) a study of gains between 1988 and 1990 should permit firm conclusions about the effectiveness of the different instructional models. Statistical data are presented in four tables and two graphs. (FMW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED330764

SEATTLE PUBLIC SCHOOLS
815 Fourth Avenue North
Seattle, Washington 98109

COMPENSATORY EDUCATION SUSTAINED GAINS FROM SPRING 1985 TO SPRING 1987

REPORT NO. 90-4
OCTOBER, 1990

MADELAINE RAMEY

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

William M. Kendrick
Superintendent

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
D. G. Colwell
Seattle Public Schools
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

L. Matsuda
Lawrence Matsuda, Assistant Superintendent
Student Support Services

Nan Stavnshoj
Nan Stavnshoj, Director
Student Assignment Services

George Sanders, Manager
Management Information Services

UD 028 002

BEST COPY AVAILABLE

COMPENSATORY EDUCATION
SUSTAINED GAINS FROM
SPRING 1985 TO SPRING 1987

The Seattle School District's 1985-87 sustained gains study uses a definition of sustained gain that parallels that of the District's 1983-85 sustained gains study (Ramey & James, 1985). [illegible] student's sustained gain is the reading or math test score gain he [illegible] ing 1985 to spring 1987, a period that includes a year of compensat[illegible] education service in 1985-86 and no compensatory education service for the 19[illegible] school year.

Students who fit the above pattern of service, were in grade 2, 3, 4, or 5 in 1985-86, were not retained in grade during 1985-87, and have California Achievement Test (CAT) scores for spring 1985, 1986, and 1987 comprise the study group. Study group students may have been served through any one of four instructional models: (1) a traditional 'pull-out' approach in reading and/or math, (2) computer assisted instruction (CAI) in reading and/or math (also called 'prescriptive' reading and math), (3) individual tutoring in reading by community volunteers (HOSTS--Helping One Student to Succeed), or (4) a reading resource specialist (RRS) approach.

The comparison group consists of all students who were in grade 2, 3, 4, or 5 in 1985-86, did not receive compensatory education service, and were not retained in grade during 1985-87.

The following gives the study's two questions and their answers, which were obtained by analyses of CAT score data. Please see the Methodology Note at the end of this report for details of the analyses.

1. Are the 1985-87 gains for study group students in any of the compensatory reading or math programs (Pull-Out, CAI, HOSTS, or RRS) greater than those for the comparison group?

   Tables 1A and 1B show the primary level results. At the primary level, statistical tests indicated no significant differences between gains for any of the models and gains for the comparison group, although the small number of primary level study group students who participated in HOSTS may be the reason for nonsignificance for this model.

   Tables 2A and 2B show the intermediate elementary results, although the reader might find that Figures 1 (Reading) and 2 (Math) present a clearer picture of these results. At the intermediate level, for reading, both HOSTS and Pull-Out participants showed gains that were significantly greater than gains for the comparison group. RRS participants' scores showed a positive but nonsignificant trend and CAI participants' scores showed a negative trend relative to the comparison group's scores. For math, only Pull-Out participants showed gains that were significantly greater than gains made by the comparison group.

ACKNOWLEDGEMENT

The author thanks Beverly Shanahan for her assistance throughout the production of this report. The editing, word processing, and graphics are her visible contribution; her cheerful and unflagging support are less visible.

2. How do these findings compare with those of the 1983-85 study?

The finding of a positive effect of the Pull-Out approach on both reading and math scores duplicates that for 1983-85; however, in 1983-85 there weren't enough students at both grade levels to compare models separately for each. Isolating the effect to the intermediate level is a result new to this 1985-87 study. The finding of a positive effect of HOSTS at the intermediate level is also a new result, although a statistically nonsignificant trend in the positive direction was present in the 1983-85 study. The nonsignificant positive result for RRS duplicates that found for 1983-85, but the poor showing of the CAI approach does not.

The similarity of results from the two studies suggests some real differences among the instructional approaches. A third replication, in the form of a 1988-90 sustained gains study, will be conducted in the very near future; the cumulative results of all three studies should permit firm conclusions about the relative effectiveness of the different instructional approaches.

METHODOLOGY NOTE

Analyses used Total Reading and Math scores for spring 1985, spring 1986, and spring 1987 for both the study and comparison groups. Statistical tests of significance were applied only to differences between 1985 and 1987 scores. The metric used in assessing differences was the standardized change score, which was computed by standardizing (subtracting the mean and dividing by the standard deviation of) test publisher's scale scores across both groups for each year and subtracting 1985 from the 1987 standardized scores. Standardization was done separately for primary and intermediate elementary grade levels. Standardized change score analysis is recommended by Kenny (1975) for comparing compensatory education with other groups of students.

Comparisons between study and comparison groups were limited to students who were promoted to the next grade in both 1985 and 1986 to insure that all students in a given grade in spring 1985 took the same test in spring 1986 and spring 1987.

REFERENCE

Kenny, David A. (1975). A quasi-experimental approach to assessing treatment effects in the nonequivalent control group design. Psychological Bulletin, 82, 345-362.

/bs:MR:susgain1.1

TABLE 1A

SPRING CAT READING SCALE SCORES
BY YEAR AND READING MODEL
FOR PRIMARY GRADES

	1985		1986		1987		
Reading Model	Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation	N
Pull-Out	320.4	32.8	370.7	37.6	407.4	43.8	311
CAI	321.8	36.2	375.9	42.3	417.1	44.0	117
HOSTS	301.6	52.7	355.6	38.8	409.5	26.4	8
RRS	330.5	51.0	377.4	42.8	421.4	46.6	100
No Intervention	375.0	51.1	427.4	56.6	469.9	59.8	3,261

TABLE 1B

SPRING CAT MATH SCALE SCORES
BY YEAR AND MATH MODEL
FOR PRIMARY GRADES

	1985		1986		1987		
Math Model	Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation	N
Pull-Out	320.8	26.4	369.5	30.1	397.5	30.6	132
CAI	328.9	23.1	377.9	27.7	402.9	29.7	44
No Intervention	362.5	32.8	407.7	38.8	445.7	41.1	3,283

Note: None of the reading or math model gains was significantly greater than the No Intervention comparison group gain.

TABLE 2A

SPRING CAT READING SCALE SCORES
BY YEAR AND READING MODEL
FOR INTERMEDIATE ELEMENTARY GRADES

	1985		1986		1987		
Reading Model	Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation	N
Pull-Out*	392.8	34.3	441.2	36.3	469.2	41.3	234
CAI	402.5	34.1	443.2	39.9	455.1	44.0	41
HOSTS*	390.6	26.5	450.9	27.9	481.0	36.8	25
RRS	406.2	38.9	441.9	41.4	486.0	40.9	52
No Intervention	467.8	58.6	507.8	60.7	542.1	65.2	3,204

TABLE 2B

SPRING CAT MATH SCALE SCORES
BY YEAR AND MATH MODEL
FOR INTERMEDIATE ELEMENTARY GRADES

	1985		1986		1987		
Math Model	Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation	N
Pull-Out*	395.7	24.4	446.6	33.3	472.6	30.0	197
CAI	401.0	28.3	448.0	33.6	469.6	45.5	49
No Intervention	446.0	40.4	485.2	48.0	521.7	53.7	3,203

* When scale scores are standardized, the average value of the 1987 score minus the 1985 score is significantly greater ($p < .05$) for these students than for the No Intervention comparison students.

FIGURE 1

CAT AVERAGE TOTAL READING SCORES (STANDARDIZED) FOR SPRING 1985, 1986, AND 1987 BY READING MODEL FOR INTERMEDIATE ELEMENTARY STUDENTS

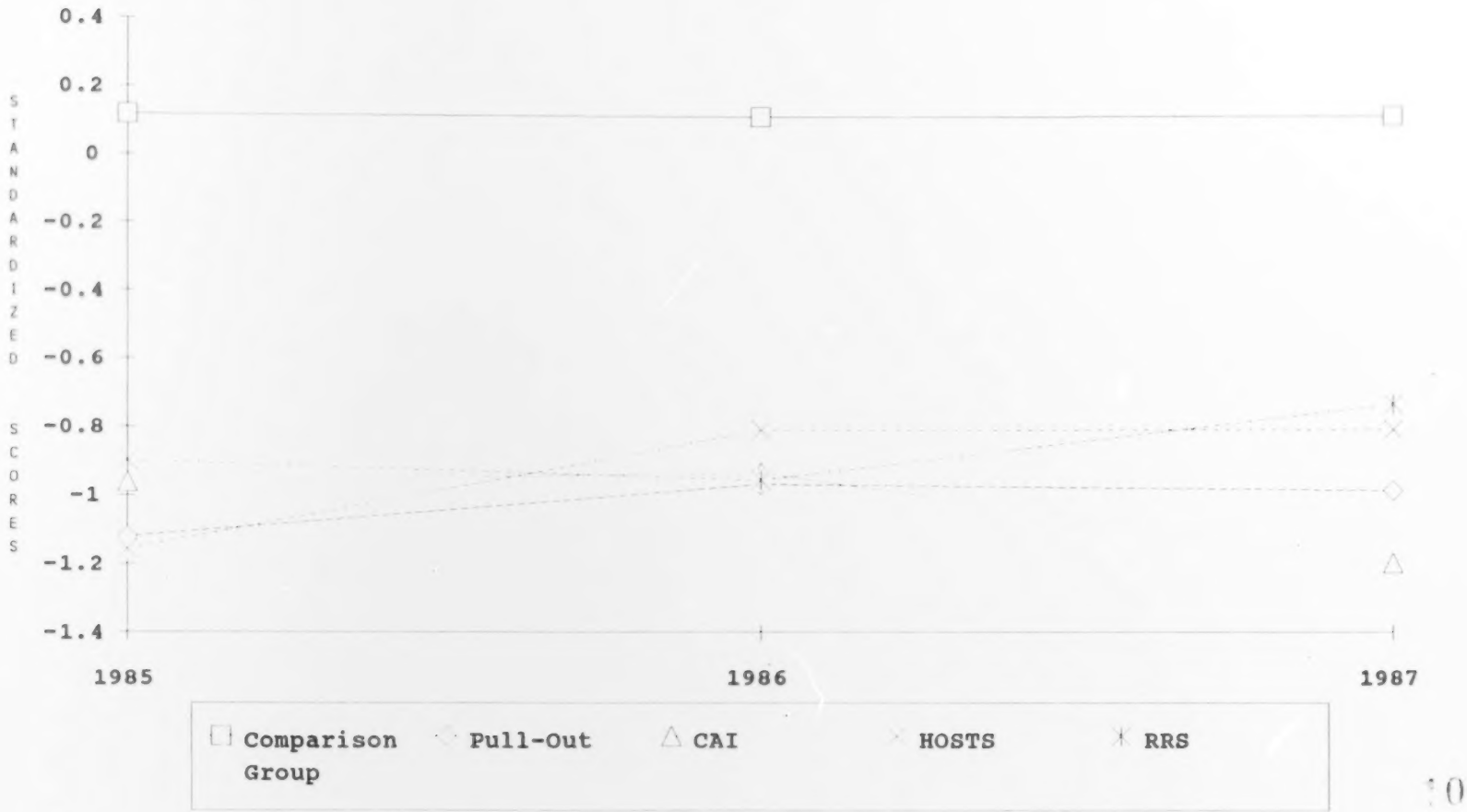
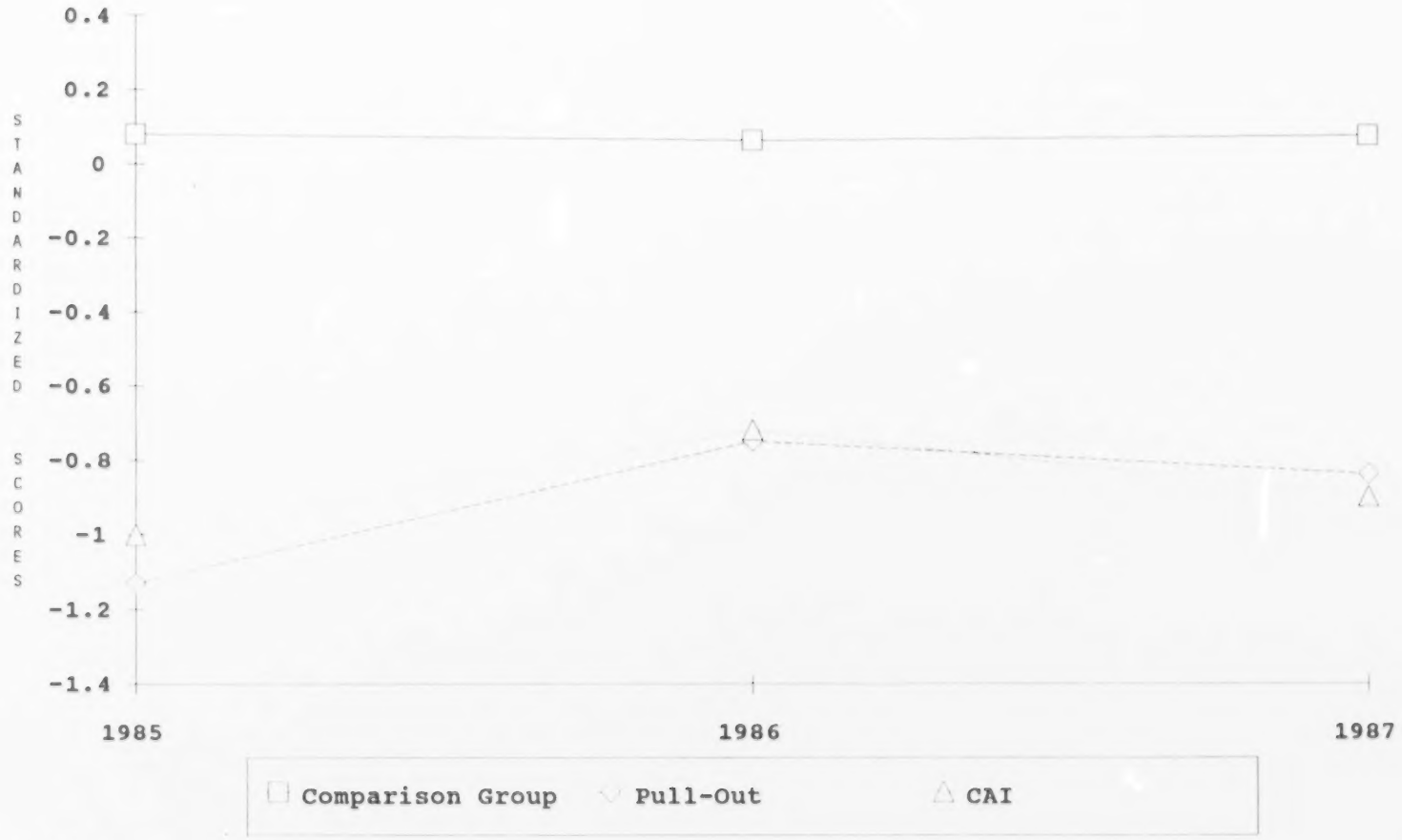


FIGURE 2

CAT AVERAGE TOTAL MATH SCORES (STANDARDIZED) FOR
SPRING 1985, 1986, AND 1987 BY MATH MODEL
FOR INTERMEDIATE ELEMENTARY STUDENTS



The Seattle Public Schools

BOARD OF DIRECTORS

Marilyn S. Smith, President
Michael Preston, Vice President
Kenneth Eastlack
Amy Hagopian
Ellen Roe
Connie Sidles
Alan Sugiyama

SUPERINTENDENT

William M. Kendrick

BEST COPY AVAILABLE